



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,871	01/24/2002	Ikuo Kawamoto	Q68205	8685

7590 04/22/2005
Sughrue Mion Zinn
Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037

EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT PAPER NUMBER

2871

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/031,871	Applicant(s) KAWAMOTO ET AL.	
	Examiner Tarifur R. Chowdhury	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/14/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/08/05 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2871

4. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheffer, USPAT 4,032,218 in view of Itoh et al., (Itoh), EP 0457607.

5. Scheffer discloses (col. 2, lines 54-60) and shows in Fig. 1a, a polarizing member comprising a cholesteric liquid crystal layer (7), a quarter-wave plate (6), and a liquid crystal cell (3) (applicant's optical rotatory film since the liquid crystal cell itself can be considered as a film), wherein the quarter-wave plate (6) is interposed between the cholesteric liquid crystal layer (7) and the optical rotatory layer (3), the optical rotatory layer (3) being adjacent to the quarter-wave plate (6), and an absorption type polarizer (2) disposed on an upper side of the optical rotatory layer (3), so that the optical rotatory layer is interposed between the quarter-wave plate and the absorption type polarizer (2) (col. 2, line 62 – col. 3, line 6).

Scheffer differs from the claimed invention because he does not explicitly disclose that the optical rotatory layer is made of a polymer containing a nematic liquid crystal monomer and optically active monomers as components and thus a single solid film.

Itoh discloses that an optical rotatory layer that is made of a polymer containing a nematic liquid crystal monomer and an optically active monomer as components. Itoh also discloses that such an optical rotatory layer is advantageous since it permits a high accuracy in the wide range of wavelengths and in the fields of display (page 2, lines 1-2, 17-18).

Itoh is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use an optical rotatory layer that is made of a polymer containing a nematic liquid crystal monomer and optically active monomers as components.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the polarizing member of Scheffer by substituting the optical rotatory layer with an optical rotatory layer that is made of a polymer containing a nematic liquid crystal monomer and optically active monomers as components so that a high accuracy in the wide range of wavelengths and in the fields of display can be obtained, as per the teachings of Itoh.

Accordingly, claims 1 and 4 would have been obvious.

Still lacking is the limitation such as the optical rotatory layer being laminated on the quarter-wave plate through an adhesive layer. However, it is notoriously well known in the art to laminate two layers/elements together through an adhesive layer for advantages such as strong bonding and preventing the possibility of one layer flopping off the other and thus would have at least been obvious to one of ordinary skill in the art.

As to claim 3, it is also clear from Fig. 1a as well as the disclosure of Scheffer that a major or minor axis of the optical rotatory layer in each of opposite surfaces of the optical rotatory layer is parallel to a plane of polarization of light linearly polarized by a combination of the cholesteric liquid crystal layer (7) and the quarter-wave plate (6) to an axis of polarization of the absorption-type polarizer (2).

As to claims 5 and 6, setting the condition for the degree of optical rotation of the

optical rotatory layer to be satisfactory does not constitute a special design restriction. The degree of optical rotation is such as can be decided in accordance with factors such as required performance traits.

6. Claims 1 and 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishimoto Keiko (Kishimoto), JP 09-329779 in view of Itoh et al., (Itoh), EP 0457607.

7. Kishimoto discloses a polarizing member comprising a cholesteric liquid crystal layer combined with a quarter-wave plate.

Kishimoto differs from the claimed invention because he does not explicitly disclose the claimed optical rotatory film.

Itoh discloses an optical rotator. Itoh also discloses that optical rotator is used for the purpose of causing an azimuthal rotation of linear polarization or of elliptic polarization (page 2, lines 6-8).

Itoh is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use an optical rotator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the polarizing member of Kishimoto by employing an optical rotator so that azimuthal rotation of linear polarization or of elliptic polarization is achieved, as per the teachings of Itoh.

Further, since Itoh teaches the use of an optical rotatory layer to achieve rotation of polarization and Kishimoto discloses a polarizing member having a cholesteric liquid crystal layer and a quarter-wave plate, it would have been obvious to one of ordinary

Art Unit: 2871

skill in the art that the modified structure would have the quarter-wave plate in between the cholesteric liquid crystal layer and the optical rotatory layer for achieving rotation of polarization.

Further the combination of Kishimoto and Itoh indicate a combination of an optical rotatory layer and an absorption type polarizing plate. It is also specified that the long axis or the short axis of the optically active layer is parallel to the polarizing surfaces of linear polarization due to the cholesteric layer and quarter-wave plate of the front and rear surfaces of the optically rotatory layer and the axis of polarization of the absorption type polarizing plate. However, considering the transmission of polarized light, stipulating the optically active layer so as to match the direction of the polarized wave of polarized light and the axis of polarization, etc., of the polarizing member, including the polarizing plates on either side of the optically active layer, is obvious to a person skilled in the art from the point of view of the technical significance of providing an optically active layer.

Still lacking is the limitation such as the optical rotatory layer being laminated on the quarter-wave plate through an adhesive layer. However, it is notoriously well known in the art to laminate two layers/elements together through an adhesive layer for advantages such as strong bonding and preventing the possibility of one layer flopping off the other and thus would have at least been obvious to one of ordinary skill in the art.

Accordingly, claims 1 and 3 would have been obvious.

As to claim 4, Itoh discloses that the optical rotatory layer is made of a polymer

containing a nematic liquid crystal monomer and an optically active monomer as components.

As to claims 5 and 6, setting the condition for the degree of optical rotation of the optical rotatory layer to be satisfactory does not constitute a special design restriction. The degree of optical rotation is such as can be decided in accordance with factors such as required performance traits.

As to claims 7-10, Kishimoto discloses and shows that the polarizing member is disposed on the back side (opposite to a visual side) of the liquid crystal cell.

Response to Arguments

8. Applicant's arguments filed on 02/11/05 have been fully considered but they are not persuasive.

In response to applicant's argument that in Scheffer the liquid crystal cell can not be same as the optical rotatory film as claimed since film is a solid object compare to a the liquid crystal layer being in a liquid state for the liquid crystal cell, it is respectfully pointed out to applicant that first of all the terms, "film" and "layer" are interchangeable since "film" does not necessarily mean that is a solid object. Further, applicant does not clarify that the film is a single layer solid object. Even though the claims are read in light of the specification, the specification is not read into the claims. Thus considering the liquid crystal cell of Scheffer as an optical rotatory film is proper. Further, even arguendo that the liquid crystal cell of Scheffer cannot be considered as a film, the examiner further provides Itoh who teaches or suggests the advantage of using a single optical rotatory film.

In response to applicant's argument that the combination of Kishimoto and Itoh fail to disclose providing the optical rotatory film between the absorption-type polarizer and the quarter-wave plate, applicant's attention is respectfully requested to the rejection above.

In response to applicant's argument that the polarizing member of the claimed invention has an effect of suppressing coloring in an obliquely viewing direction, more specifically the chromaticity change when the azimuth becomes oblique has an excellent value, is irrelevant since it is not claimed. Further, it is also pointed out to applicant that the modified structure of Scheffer in view of Itoh or Kishimoto in view of Itoh provides a polarizing member that is similar to the claimed invention and thus any functions performed by the polarizing member would be either inherent or obvious.

Conclusion


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
April 19, 2005



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER